PART III
RESPONSIVENESS SUMMARY

1. INTRODUCTION

This Responsiveness Summary is Part III of the Record of Decision (ROD) for Operable Unit 1-10 of Waste Area Group (WAG) 1, Test Area North (TAN), at the Idaho National Engineering and Environmental Laboratory (INEEL). This document was prepared by the U.S. Department of Energy (DOE), the U.S. Environmental Protection Agency (EPA), and the Idaho Department of Health and Welfare, Division of Environmental Quality (the Agencies). Requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as well as the requirements of the Federal Facility Agreement and Consent Order (FFA/CO) were followed in preparation of this Responsiveness Summary. The decision made by the Agencies for this Operable Unit is based on information contained in the Administrative Record.

This Responsiveness Summary identifies and responds to more than 250 statements of preferences and concerns, comments, and questions received in more than 60 pages of written comments from at least 20 individuals and interested groups, and as formal statements at three public meetings, held on February 23, 24, and 26, 1998. All comments on both the February 1998 Proposed Plan and the November 1998 revised Proposed Plan were considered in preparation of the ROD and this Responsiveness Summary. All comments are included verbatim in the Administrative Record for WAG 1. The comments cover a wide range of issues, including:

1. Questions about the general goals of the CERCLA program

2. Evaluations of the effectiveness of the Proposed Plans and other community relations activities

3. Requests for more detail on aspects, procedures, and results of the comprehensive remedial investigation and feasibility study (RI/FS)

4. Concerns, disagreements, and requests for information about the content and history of sites identified for remediation, the details of remedial alternatives considered, the evaluation of the alternatives, and the rationale for the preferred alternatives

5. Statements supporting INEEL's cleanup program in general and approving of the remedial actions planned.

Written comments received and formal statements made at the public meetings showed that community acceptance of the preferred alternatives, as presented in the revised Proposed Plan, ranges from support, to support with reservations, to opposition and support for other alternatives. It can be seen from the following Responsiveness Summary that:

- The preferred alternative for the V-Tanks (Sites TSF-09 and TSF-18), in situ vitrification (ISV), drew many questions about its effectiveness, verifiability, safety, and compliance with applicable or relevant and appropriate requirements (ARARs). Although the results of the 1998 planar ISV treatability study provided answers to these concerns, new information on the cost of ISV for the V-Tanks severely decreased its cost-effectiveness. At the same time, Alternative 2 – Soil and Tank Removal, Ex Situ Treatment of Tank Contents, and Disposal – became more implementable

due to the availability of facilities now permitted to treat the type of mixed waste found in the V-Tanks. This new information prompted a reevaluation of V-Tanks alternatives, and a change to Alternative 2 as the selected remedy.

- The preferred alternative for the PM-2A Tanks (Site TSF-26) was generally supported, with concerns expressed about its compliance with ARARs and verifiability.

- The preferred alternative for the Soil Contamination Area South of the Turntable (Site TSF-06, Area B) was generally supported.

- The preferred alternative of Limited Action for the Disposal Pond (Site TSF-07) was generally supported, although comments showed some preference for alternatives that remove or treat contamination.

- The reevaluation of alternatives for the Burn Pits (Sites TSF-03 and WRRTF-01) presented in the revised Proposed Plan resulted in the selection of Containment with a Native Soil Cover as the preferred alternative. Comments were largely nonsupportive of this action, as they were for the previous preferred alternative, because the alternative does not remove or treat contaminants. Comments noted that another alternative does involve removal and costs approximately the same.

- The removal of the Mercury Spill Area (Site TSF-08) from this ROD for use in a phytoremediation treatability study received positive support, in strong contrast to the previous predominantly negative support of a removal alternative preferred in the original Proposed Plan.

- Limited Action, the original preferred alternative for the Fuel Leak (Site WRRTF-13), received relatively low support; specific objections were that it would leave contamination in place and not be cost-effective. The revised Proposed Plan's selection of excavation and land farming had higher community acceptance; aspects that were questioned are effectiveness and the plan for implementation.

2. BACKGROUND ON COMMUNITY INVOLVEMENT

The Proposed Plan for WAG 1 was originally released in February 1998. During the 30-day public comment period, three public meetings were held, in Idaho Falls, Boise, and Moscow. The comment period was extended an additional 30 days in response to requests from members of the public.

In response to comments on the Proposed Plan, the Agencies revised and re-released it in November 1998. During the revision, after review of public comments and newly available technical information, the preferred alternatives were reevaluated for several sites and, in a few cases, changed. Public meetings were not repeated after the release of the revised Proposed Plan, but a public comment period was provided and again extended to 60 days. All written comments received before the close of the comment periods, and oral comments made during the formal comment session of each public meeting, are responded to by the Agencies in this Responsiveness Summary.

The public meetings each included an informal question-and-answer session as well as the formal public comment session. The meeting format was described in published announcements and meeting attendees were reminded of the format at the beginning of each meeting. The informal question-and-answer session was designed to provide immediate responses to the public's questions and concerns. Several questions were answered during the informal question-and-answer periods during the public meetings on the Proposed Plan. This Responsiveness Summary does not attempt to summarize or respond to issues and concerns raised during that part of the public meeting. However, the Administrative Record for WAG 1 contains complete transcripts of these meetings.

3. SUMMARY OF COMMENTS RECEIVED DURING PUBLIC COMMENT PERIOD

Comments and questions received during the public comment period are summarized below. The comments were grouped into topics, according to the issues they focused on, and were then summarized into succinct statements, to capture the significant issue or topic discussed, or information requested. The purpose is to provide, as required by EPA guidelines for Responsiveness Summaries, a clear and concise measure of: (1) which aspects or elements of the alternatives the community supports, opposes, or has reservations about, and (2) general concerns about the sites and the CERCLA process at those sites.

The objective of the summary is to provide for the community and Agency decision-makers a synopsis of community preferences and concerns, and Agency responses. Although the summarized statements rephrase, for brevity, the original verbatim comments submitted, they in no way replace them and are not intended to alter their focus. Bracketed numbers at the end of each summarized issue statement identify the original comment or comments, which can be referred to in Appendix A for the complete original discussions or questions from which the summary statements of significant concerns were condensed.

Appendix A contains the original comments in their entirety, either as scanned written submissions or as public meeting formal comment period transcripts. Each document is annotated to indicate the comments used to prepare the Responsiveness Summary. The documents are numbered separately in three series: comments in response to the February Proposed Plan (F1 through F12); comments in response to the November Proposed Plan (N1 through N7); and comments transcribed during the formal comment sessions of the public meetings (T1 through T3). Indexes in Appendix A list the comments by commenter, by response number, and by topic.

The responsiveness summary begins with a group of questions and comments on INEEL environmental remediation goals, the community relations process, and the budget and planning process for TAN remediation. The second group of questions and comments concerns the comprehensive RI/FS and the activities carried out during this process. The third group of questions and comments focuses on the individual sites retained for remedial action under this ROD, their description, and the alternatives developed and evaluated for them. The final group covers tangential but significant concerns, which some commenters felt were related to TAN remediation. Within the first three groups of questions and comments, issues are presented in an order parallel to the development of topics in the Proposed Plan. A total of 83 issues or topics are identified in this summary.

3.1 WAG 1 Cleanup and Public Participation

3.1.1 Overall Goals and Structure of the INEEL Environmental Restoration Program

1. Is there a clear need for action? Isn't the INEEL too far away from population areas to justify this time and expense? Is this material really dangerous to anyone that handles it? Or are there more important uses for federal money? [F2-2, F2-3, F6-8]

   Response: The DOE is required to clean up inactive waste sites at the INEEL if they pose a risk to human health or the environment. Cleanup is required by the Superfund Program, which was passed by Congress in 1980 to eliminate health and environmental threats posed by hazardous waste sites. The laws implementing the Superfund program have a "bias for action." This means that remedial action (cleanup) is emphasized. The laws also stress the importance

of permanent remedies. The Agencies (DOE, EPA, and the State of Idaho) have agreed to thoroughly investigate, and undertake and complete appropriate response actions as necessary to protect human health and the environment. This agreement is documented in the Federal Facility Agreement and Consent Order (FFA/CO).

Cleanup activities must be cost-effective. Cost-effectiveness is determined by evaluating three of the five balancing criteria to determine overall effectiveness: long-term effectiveness and permanence; reduction of toxicity, mobility, or volume through treatment; and short-term effectiveness. A remedy is considered to be cost-effective if its costs are proportional to its overall effectiveness.

The Agencies have determined in this ROD which sites at TAN could pose risks to human health and the environment if they are not cleaned up. Although these sites are not close to major population centers, current and future workers and future residents could be exposed to risks from the sites.

2. What is the overall remedial action strategy? Please explain why some remedies leave contamination in place while others remove it. [F6-9]

   Response: The EPA's guidelines direct the remedy selection process. The goal is to select remedies that are protective of human health and the environment, that maintain protection over time, and that minimize untreated waste. In selecting a remedy, therefore, the guidelines make a preference for "active response measures," or treatment. Remedies that involve treatment are most likely to be appropriate measures for waste that is highly toxic, highly mobile, or liquid. For waste that poses a relatively low long-term threat or where treatment is impracticable, engineering controls (such as containment) are considered appropriate. Institutional controls (such as deed restrictions) may be used to supplement engineering controls, but shall not substitute for active response measures (for instance, treatment or containment) as the sole remedy unless the evaluation of alternatives shows that active response measures are not practicable.

   More information on how remedial actions are developed and evaluated can be found in the regulations implementing CERCLA. They are available in Volume 40, Part 300.430 of the Code of Federal Regulations (40 CFR 300.430) in many libraries, through the Government Printing Office, or via the Internet (see, for instance, the EPA's web site at **http://www.epa.gov**).

3. Does the cleanup cause economic hardship by eliminating jobs? [F2-3, F2-5]

   Response: The remedial actions proposed in this ROD do not require halting any ongoing work. CERCLA cleanup focuses only on inactive sites. Therefore, no jobs will be eliminated by the cleanup activities.

4. Most commenters agreed that remediation is needed. However, opinions on WAG 1 remediation varied in supportiveness. One comment characterized the proposed actions in general as "illegal dumping." Another comment said the remedial alternatives fail to meet ARARs. Others commended the INEEL for "expert work," and described the Proposed Plan as "complete," "in more detail," and "more thought out" than others. [F4-2, F10-1, N3-2, N3-7, N3-16, N7-3, T1-1]

Response: The investigation and cleanup process and schedule for TAN have complied with the FFA/CO for the INEEL signed in 1991. Every reasonable effort is made to ensure that TAN remediation activities contribute to the ultimate goal of protecting human health and the environment by use of recognized engineering and institutional responses, that meet standards for protectiveness identified by the Agencies. These standards (ARARs) were identified in the comprehensive RI/FS and this ROD and will be enforced by the Agencies. The remedies proposed for WAG 1 sites are in no way illegal.

The CERCLA process carried out for TAN included all required community relations activities to ensure that the public had appropriate opportunities for involvement in a wide variety of site-related decisions, including site analysis and characterization, alternatives analysis, and remedy selection. The public meetings, the Proposed Plans and associated comment periods, and the Administrative Record all provided opportunities for the community to learn about the WAG 1 remediation and inform the Agencies about their concerns. The Agencies hope that the WAG 1 CERCLA process with its public comment opportunities, and other regulatory hearing processes required by RCRA, will help build trust in the INEEL's path forward.

5. How will "legacy" and "investigation-derived" waste be dealt with? The statement in the revised Proposed Plan that investigation-derived waste has been dealt with throughout the investigation process fails to mention the 25,000 "legacy samples" from years of CERCLA investigation that were recently dispositioned by the INEEL. [F7-20, N1-6]

   Response: Legacy waste is the formal term used by the DOE's Environmental Management Program for the backlog of stored waste remaining from the development and production of U.S. nuclear weapons, about which a permanent disposal determination remains to be made. No legacy waste has been or will be generated by the CERCLA process at TAN, nor does the WAG 1 investigation include the program for their disposal.

   Investigation-derived waste is contaminated soil, debris, liquid, sampling equipment, and personal protective equipment generated during site characterization and removal activities. It includes samples returned from analytical laboratories. Actions taken prior to or during cleanup will include appropriate disposal of WAG 1 investigation-derived waste in accordance with federal and state regulations and the CERCLA process.

6. When "cleanup" is complete, how clean will WAG 1 be? Will contamination remain over the Snake River Plain Aquifer? [N5-7]

   Response: The goal of the actions taken under this ROD is to reduce risks posed by contamination to levels that protect human health and the environment. Sites will be cleaned up to meet the remedial action objectives (RAOs) specified in the comprehensive RI/FS, the revised (November) Proposed Plan, and the ROD for WAG 1, wherever that is practicable given considerations of technical feasibility and cost-effectiveness, as directed under CERCLA. The RAOs are based on the results of the human health risk assessment (HHRA) and are specific to the contaminants of concern (COCs) and exposure pathways. To meet these RAOs, final remediation goals (FRGs) were established to ensure a risk-based protectiveness of human health and the environment by providing unrestricted land use in 100 years. Any contamination left in place by the actions taken under this ROD will be below these levels, or will be prevented by engineering and institutional controls from completing a pathway to human receptors or the environment. The CERCLA process followed in the comprehensive RI/FS evaluated potential groundwater impacts from TAN release sites to ensure that groundwater quality is not affected. Groundwater remediation actions were required by the

1995 ROD for the TSF-05 Injection Well and are on track to meet remedial objectives. Monitoring will continue to be carried out to verify the protectiveness of TAN CERCLA actions, where appropriate.

3.1.2 Public Participation and Community Relations

7. Several commenters expressed appreciation for the opportunity to comment on the Proposed Plan. The Agencies were commended for their willingness to grant comment period extensions and to accept late comments from the public. Appreciation was also expressed for the public meetings. The public meeting presentations were described as informative, thorough, and useful. One commenter, a senior citizen, expressed some regret that meetings are held only during the evening in towns some distance from his home, which prevents him from attending. [F2-1, F4-1, F6-21, N4-1, N5-1, T2-1]

   Response: The Agencies encourage citizen involvement in decision making at the INEEL. To ensure opportunities for public interaction with project representatives, public meetings are conducted at multiple locations across the state to ensure that interested parties can participate, despite their distance from the INEEL itself. The WAG 1 Proposed Plan was revised extensively and re-released in direct response to public comments. The comment periods for both Proposed Plans were extended in response to public requests for additional time to participate in the decision-making process. A broad variety of topics are discussed in the informal portions of the public meetings, in response to the concerns of the people who attend. A variety of materials on the many ongoing cleanup programs are available at the meetings. In addition, the INEEL provides other avenues for public involvement, including tours and briefings. Postal addresses, telephone numbers, e-mail addresses, and Internet site addresses are provided in each Proposed Plan for citizens to get additional information, briefings, or tours from Agency and project representatives.

8. Several commenters on the original Proposed Plan strongly suggested that it be revised and re-released. They argued that both its communication style and content precluded public review. The decision to issue a reorganized, revised Proposed Plan in November 1998 received strong public support. Several commenters strongly approved of the action. [F3-1, F7-1, F7-3, F12-1, N3-1, N7-1]

   Response: In response to public comment, the Agencies revised the Proposed Plan and re-released it. During the review of comments on the Proposed Plan, the Agencies reassessed their initial determination for some WAG 1 sites that the preferred alternative provided the best balance between criteria. The Agencies factored in newly available information and the points of view expressed by the public. A Feasibility Study Supplement was prepared to consider several additional alternatives and reevaluate the alternatives. The Proposed Plan was revised accordingly.

9. One commenter expressed concern that the public also be given an opportunity for formal participation in the proposed INEEL CERCLA Disposal Facility (ICDF) development, which may form part of the WAG 1 remedial response, but has not been fully described in terms of its siting, design, capacity, lifespan, and waste acceptance criteria. [N5-6]

   Response: The Agencies encourage citizen involvement in decision-making at the INEEL. Although the ICDF may be selected as the on-Site disposal facility for TAN materials during the WAG 1 remedial design, the development of the ICDF itself is being planned under Waste Area Group 3 at the Idaho Nuclear Technology and Engineering Center (INTEC; formerly the

Idaho Chemical Processing Plant). A description of the proposed ICDF, including its siting, design, capacity, lifespan, and waste acceptance criteria, was presented in October 1998, in the Proposed Plan *for Waste Area Group 3 at the Idaho Chemical Processing Plant.* The Record of Decision for Waste Area Group 3 is expected to be finalized in September 1999.

3.1.3 Content and Organization of the Proposed Plan

10. Numerous commenters who reviewed the Proposed Plan released in February 1998 criticized it, claiming it had unclear language, poor readability and format, and inconsistencies and perceived weaknesses in the presentation of remedial alternatives. [F7-1, F7-3, F7-4, F7-44, F9-3, F12-1, F12-2, F12-6, F12-7]

    Response: The Proposed Plan was revised and re-released in response to comments made by the public. Once the decision was made to revise the plan, the opportunity became available to reevaluate all the alternatives that had been developed. For several release sites, additional technical information regarding remedial alternatives became available after February, and this was investigated and considered. Two treatability studies were carried out for one site, and further investigations of contamination were carried out at two sites. Additional alternatives were developed for several sites, and the preferred remedy for five sites was changed. As a result, the revised Proposed Plan issued in November 1998 not only used an improved format and wording, but also presented an amplified set of cleanup alternatives forming the basis for the best final selection of remedies. The treatability studies and additional contamination evaluations confirmed the selection.

11. The revised Proposed Plan, released in November 1998, was praised for improved readability, clearer organization, and fuller information. Some criticisms remained, however, mainly concerning stylistic points. [N1-1, N4-2, N5-2, N6-1, N6-3, N7-2, N7-4]

    Response: An effort was made to respond to specific areas that concerned readers, which included organizing a focus group with members of the public to ask exactly what items were hard to read or understand, and hear ideas on improvement. Many changes resulted from readers' requests.

    Word usage and punctuation are aspects of the document's style, which follows a style guide established by INEEL for this type of public, yet technical, document. The comments reflecting one reader's usage preference (see Comments N6-1 and N6-3) are noted, and may be considered in future style guide revisions.

    One comment (N1-1) questioned why the revised Proposed Plan did not specifically describe and discuss the changes made from the first Proposed Plan. The changes in technical content are described in detail in the Feasibility Study Supplement. The revised Proposed Plan is a summary only, containing information required for the public to review the final set of alternatives and preferences under consideration. In preparation of the revised Proposed Plan, it was clear that as a stand-alone document, it should not contain numerous references to a plan that it superseded. The need to review two versions of the same plan should not only be unnecessary, but could confuse readers who had not read or did not have the previously issued plan. The decision was made, therefore, to issue a revised Proposed Plan that is based directly on the comprehensive investigation documents, as required. This ROD provides a record of the revision reasons and process.

12. Several commenters suggested types of information they feel it would be helpful to include, such as an appendix or readily available supplement that explains the risk assessment method(s) used in the plan; a statement regarding the 30-year half-life of cesium-137; and a list and glossary of acronyms used in the Proposed Plan. One commenter believes the Proposed Plan should include more data on all operable units, including sampling data, data sources, maximum contaminant levels, and the proposed action or no action decisions. Other commenters, especially those reviewing the February Proposed Plan, indicated they felt the Proposed Plan contained too much detail. [F7-44, F10-8, N3-2, N3-9, N4-5, N4-6, N6-4]

Response: The Agencies appreciate all suggestions from the public on types of information that could help a Proposed Plan better serve its purpose. The Proposed Plan is an important community relations activity undertaken as part of the CERCLA process. The EPA's CERCLA guidelines define a Proposed Plan's content and purpose (see 40 CFR 300.430 and *Guidance on Preparing Superfund Decision Documents,* OSWER Directive 9355.3-02).

The Proposed Plan, under CERCLA guidelines, supplements and is based on the comprehensive RI/FS, "but is not a substitute for that document." The Proposed Plan provides a "brief summary description" of: (1) the remedial alternatives evaluated, (2) the alternative that is preferred, and (3) the information that supports the selection of the preferred alternative. Other sections of the Proposed Plan (the history and nature of site contamination, previous actions, and risk assessment) are merely summaries of more detailed investigations, and are included as background information.

Many commenters on both WAG 1 Proposed Plans emphasized their strong desire for clear language and a straightforward format. The Agencies strive to provide the information required by CERCLA in the Proposed Plan with both clear language and organization. For readers who seek more comprehensive detail on any aspect of the investigation process, the plan provides references to the relevant sections of the comprehensive RI/FS and other documents in the Administrative Record that present in full the information from which the Proposed Plan is derived. The complete details of operable unit investigations, including sampling data, data sources, and maximum contaminant levels, can be found in the RI/FS, Track 1, Track 2, and other WAG 1 documents in the Administrative Record.

Risk assessment methods can only be summarized in the Proposed Plan, but are always described in detail as required in the RI/FS on which the plan is based.

The suggestion that the short half-life of cesium-137 (30 years) be brought forward in the Proposed Plan is an excellent one. The relative shortness of this radionuclide's half-life is important in development and evaluation of remediation alternatives for contamination sites that contain this element. Including this information enhances readers' understanding of the proposed alternatives in a brief and straightforward manner. Information on the half-lives of radionuclides has been included in subsequent Proposed Plans at the INEEL, such as those prepared for WAG 4 (Central Facilities Area) and WAG 5 (Power Burst Facility/Auxiliary Reactor Area).

Proposed Plans use very few acronyms, as part of the effort to make the documents understandable to the general public. All acronyms are defined when they are first used. As a standard practice, technical documents such as the comprehensive RI/FS and this ROD provide a list of all acronyms used following the table of contents in the document.

3.1.4 Current and Future Activities at TAN

13. How will the "remaining potential release sites" be located and assessed? How are they known to exist, and what specific existing policies are currently in place to protect the environment? [F7-5, N1-7]

Response: The possibility exists that contaminated environmental media not identified by the INEEL FFA/CO or in this comprehensive investigation will be discovered in the future as a result of routine operations, maintenance activities, and decontamination and dismantlement (D&D) activities, and review of previous decontamination and dismantlement activities. These will be addressed using the process for new site inclusion defined in the FFA/CO and will be remediated pursuant to the RAOs and final remediation goals (FRGs) identified in this ROD. The comprehensive RI/FS process at WAG 1 investigated all known actual or potential release sites. Active operations and cleanup activities at TAN are covered under various company manuals and environmental restoration management control procedures.

3.1.5 WAG 1 Remediation Planning and Costs

14. The availability of long-range funding to complete the cleanup must be assured. Where is the money coming from to pay for any residual effects after the 100-year period of control? What guarantee is there that the money will be available to complete remediation and monitoring during the 100-year period? [F5-1, F6-20, F10-11, N3-10]

Response: The federal government has an obligation to provide adequate institutional controls (i.e., limit access) to areas that pose a significant health and/or safety risk to the public and workers until that risk diminishes to an acceptable level for the intended purpose. Achievement of this obligation hinges on continued Congressional appropriation of sufficient funds to the responsible government entity charged to maintain the institutional controls for as long as necessary and as long as the federal government of the United States remains viable.

15. A commenter stated: "An argument that any reasonable discount rate would discount costs after 100 years to a negligible amount is not appropriate or consistent with DOE policy in evaluating environmental liabilities. The government should not discount risks to future generations, and, indeed, the present evaluations of environmental liabilities by DOE and other government agencies do not do so." The commenter proposed that revisions to the conduct of the RI/FS and the ROD would extend to other cases besides the Test Area North. [F5-5]

Response: The meaning of the comment may not be fully understood. All INEEL DOE-ID assessment cost estimates are prepared in the same manner. The feasibility study cost estimates and revisions thereof present estimates calculated as current year dollars, as net present value (NPV) dollars, and as escalated dollars. Only NPV cost estimates are presented in the body of the FS and the Proposed Plan, pursuant to CERCLA requirements. DOE funding, however, is not based on NPV estimates. Further details about the cost estimates are provided in Appendix J of the comprehensive RI/FS.

16. One commenting group suggested that the public might support lower-cost alternatives derived from use of less conservative risk estimates. [N4-4]

Response: Uniform CERCLA regulations and process require that the risk assessment estimates used in the RI/FS be based on the goal of reducing risk to acceptable levels. The

alternatives subsequently considered and the costs estimated for them are likewise required to relate only to actions that reduce the risks to acceptable levels.

17. The high cost of the Limited Action alternative was challenged in several comments as an "overestimated" figure for a "do-nothing" alternative. [F6-8, F6-10, F6-19, N2-4]

    Response: Limited Action is not a "do nothing" alternative. It requires that certain actions be taken to protect human health and the environment and comply with regulations. The alternative can include design, construction, and maintenance of physical and institutional control measures, as well as required environmental monitoring, documentation, and reporting. Cost estimates and assumptions are provided in Appendix J of the comprehensive RI/FS. Capital costs for Limited Action typically include design and construction of any institutional and physical controls that must be added to those already existing, and documentation and reporting during this phase. Physical controls may include perimeter security fencing with signs, and water-diversion controls. Operations and maintenance costs for Limited Action include inspection, sampling and analysis, routine maintenance, and reporting for a period of 100 years or until the review verifies that the contamination is below levels that pose a risk to human health or the environment. (Some contaminants, such as cesium-137, naturally attenuate, or decrease, over time.)

    The costs of Limited Action, therefore, can be relatively high for some sites when extensive monitoring and institutional controls are required and must be continued for 100 years. In contrast, active response measures, which provide a permanent and immediate solution through treatment or removal, may cost less for some sites, because no further monitoring or controls are needed once the remedy is completed. CERCLA requires that treatment or removal be preferred over limited action. At sites where both active response measures and limited action responses meet all criteria and are equal in cost-effectiveness, an active response remedy will be selected. Limited Action is considered for selection only when active measures are determined to be impracticable or not cost-effective.

18. The cost of placing TAN waste in the proposed INEEL CERCLA Disposal Facility (ICDF) must be assigned. [N7-6]

    Response: The actual on-Site disposal location for TAN materials, which could be the Radioactive Waste Management Complex, the proposed ICDF, or another facility, will be determined during remedial design following implementation of this ROD. The revised cost estimate to the comprehensive RI/FS included a $104 per cubic yard tippage (disposal) fee for the on-Site disposal facility for cost comparison purposes. Other cost estimate details and assumptions are contained in Appendix J of the comprehensive RI/FS. The revised cost estimate, along with the comprehensive RI/FS and related documents, is in the Administrative Record.

3.2 The CERCLA Process at WAG 1

3.2.1 The Comprehensive RI/FS

3.2.1.1 General Comments on the Comprehensive RI/FS

19. One commenter disapproved of the publication of the February Proposed Plan well ahead of the FFA/CO deadlines. The commenter believed that time existed and should have been used to conduct additional investigation and treatability studies prior to finishing the comprehensive RI/FS and preparing the Proposed Plan. [F7-2]

    Response: This publication followed the FFA/CO schedule. The schedule had to be revised by the Agencies to permit a second Proposed Plan to be prepared and released. Any additional investigations carried out upon implementation of this ROD would be to support the design of the selected remedies.

20. This and all other RI/FS and ROD documents should describe (1) for each alternative, the residual contamination remaining after remediation is completed; (2) the level of risk remaining after 100 years; and (3) how human health and the environment will be protected from residual contamination after 100 years. [F5-2]

    Response: The selected action for each site that was considered in the WAG 1 comprehensive RI/FS must satisfy the CERCLA threshold criteria (Overall Protection of Human Health and the Environment, and compliance with ARARs). These criteria require that after remediation is completed, any residual contamination is below acceptable threshold levels and that if contamination remains in place, protectiveness of human health and the environment is ensured by containment and institutional controls, as appropriate. The final remediation goals for each site are specified in Part II, Sections 7, 8, and 9, of this ROD. An evaluation of how human health and the environment will be protected from residual contamination by each alternative was made in the comprehensive RI/FS as part of the evaluations of alternatives for retained sites. Details on residual contamination amounts were also presented in the Screening Data Gap Analysis, an appendix to the *Work Plan for Waste Area Group 1 Operable Unit 1-10 Comprehensive RI/FS.*

3.2.1.2 Inclusion of Sites in the Comprehensive RI/FS

21. Explain the concept of "co-located facilities," why they are discussed in this plan, whether they should be covered under CERCLA, the Resource Conservation and Recovery Act (RCRA), or the Toxic Substances Control Act (TSCA), how they will be cleaned up and what the public participation process will be. Specific sites mentioned are TAN-616, TAN-666, LOFT-02 (Disposal Pond), RPSSA Buildings 647 and 648, and the pads and soil contamination area. [F7-6, F7-7, F7-21]

    Response: Co-located facilities is a term developed by DOE to describe buildings and structures near or adjacent to sites included in the comprehensive CERCLA RI/FS process and that are still in use or in standby mode. During the remedial investigation, an analysis of 89 such facilities and structures was performed to determine the extent to which they could contribute to future risk at TAN through past releases or potential future releases. These sites could contribute future risk in two ways. First, there could be contamination present below a building or structure or in portions of the structure (such as in piping) that it would not be

practical to evaluate until the structure is dismantled. Second, a building, structure, or activity may pose the potential for a future release to the environment. The co-located facilities analysis evaluated the possibility for these scenarios through process knowledge of past activities at these and similar facilities. Only four facilities were found to have potential to contribute to future risk at TAN: the TAN Hot Shop (TAN-607), the asphalt pads outside the Radioactive Parts Service and Storage Area (RPSSA) buildings (TAN-647 and -648), and the two Radioactive Liquid Waste Treatment and Transfer/Storage buildings (TAN-616 and -666). None of these pose an imminent threat of release; their retention is based primarily on remote accident scenarios or documented past releases at these or similar sites. As part of active operations at TAN, these sites are covered under appropriate management control procedures. The potential for these retained sites to contribute to current risk estimates is very remote. The analysis of co-located facilities and the management control procedures that apply to them are in Appendix D of the comprehensive RI/FS.

TAN-616 is a liquid waste treatment plant. It is inactive and will receive further evaluation because of potential for release of contaminants from sludge in tanks and pipes.

TAN-666 is a radioactive liquid waste transfer and storage building. It is not in use. It is authorized for operation under INEEL Emergency Plan/RCRA Contingency Plan.

LOFT-02 is a disposal pond constructed in 1971 for LOFT experiment wastewater and now used only for sanitary wastewater and boiler blowdown from the SMC operations. The comprehensive RI/FS documented that contamination from metals in soil at the LOFT-02 pond is below levels that pose risk to human health. Threats to ecological receptors from this site will be addressed under the WAG 10 site-wide comprehensive RI/FS. More information on this site is available in the Administrative Record for WAG 1.

The Radioactive Parts Service and Storage Area (RPSSA) Buildings TAN-647 and TAN-648 and the outside pads and soil contamination area were designated Site TSF-43 for the comprehensive RI/FS. TAN-647 and TAN-648 are active storage buildings operating under the INEEL Emergency Plan/RCRA Contingency Plan and will be evaluated for releases when they are dismantled. The soil beneath the asphalt pads outside the buildings is contaminated. The contamination is currently fixed in place by the asphalt covers and will be evaluated during D&D of the buildings. The soil contamination beyond the asphalt pads was evaluated as part of TSF-06, the TAN/TSF Soil Area. TSF-06, Area B (the Soil Contamination Area South of the Turntable), is the only portion of TSF-06 that was determined to require remediation. TSF-06, Area B, is being cleaned up in accordance with the decisions implemented in this ROD.

22. Several commenters contend that the RI/FS was not comprehensive, because it failed to evaluate one or more sites. Their comments list sites that were not included and request explanation of what contamination is present, whether and under what program they were remediated, and if remediation is required but has not yet been carried out, when and how it will be. The sites are: LOFT-02 Disposal Pond; TSF-05 TAN Injection Well; TSF-06 TSF TAN/TSF-1 Contaminated Soil; TSF-06, Area 8, ANP Cask Storage Pad; TSF-06, Area 10, HTRE Reactor Vessel Burial Site; TSF-07 Disposal Pond; TSF-10 Drainage Pond; TSF-20 TSF Two Neutralization Pits North of TAN-607; TSF-21 IET Valve Pit; TSF-43 RPSSA Buildings 647/648 and Pads; the TAN Pool at the TAN-607 Hot Shop; WRRTF-03 Evaporation Pond; and WRRTF-04 Radioactive Liquid Waste Tank). [F7-6, F7-21, F7-22, F7-45, F10-3, F10-12, N1-2, N1-3, N1-4, N1-5, N1-12, N3-3, N3-4, T3-1]

Response: The Proposed Plan is a summary of those sites at TAN where remedial action is required to protect human health and the environment from risks posed by past releases of contamination. The Proposed Plan is based on the comprehensive RI/FS for WAG 1, which was the culmination of nearly 50 investigations of potential release sites at TAN. These investigations, which began after the 1991 signing of the FFA/CO for INEEL, determined that 94 potential release sites at TAN required study. A 1995 Record of Decision initiated action at 2 sites and determined that no action or no further action was needed at 30 sites. The comprehensive RI/FS evaluated the remaining 62 potential release sites and determined that no action or no further action was needed at 53 sites, and threats to human health required remedial action at 9 sites. One of these 9 sites, the Mercury Spill Area (TSF-08) was selected for a treatability study that will be conducted under WAG 10. Two sites do not pose a threat to human health but do pose a risk to the environment: the LOFT-02 Disposal Pond and the WRRTF-03 Evaporation Pond. These sites also will be addressed under WAG 10. As part of the comprehensive WAG 1 risk assessment, all TAN buildings and structures that are still active or inactive but in standby mode were also evaluated to determine whether future releases from them could occur that would affect the cumulative and comprehensive assessment of risk. As documented in Appendix D of the comprehensive RI/FS, only 4 of the 89 buildings or structures could pose risk in the future. Appendix D also describes the programs in place to prevent risks to human health or the environment. The information and evaluations leading to these decisions is contained in the Administrative Record. The primary decision documents are the OU 1-07B ROD, the comprehensive RI/FS, the Feasibility Study Supplement, and the Track 1 and Track 2 reports. The Agencies believed that the Proposed Plan issued in February 1998 and the revised Proposed Plan issued in November 1998 summarized this information adequately. To resolve any confusion or lack of clarity that may have resulted, the following list recaps the disposition of the sites in question.

- LOFT-02 Disposal Pond. This disposal pond was constructed in 1971 for LOFT experiment wastewater and is now used only for sanitary wastewater and boiler blowdown from the Specific Manufacturing Capability (SMC) operations. The comprehensive RI/FS documented that contamination from metals in soil at the LOFT-02 pond is below levels that pose risk to human health. Threats to ecological receptors from this site will be addressed under the WAG 10 site-wide comprehensive RI/FS. More information on this site is available in the Administrative Record for WAG 1.

- TSF-05 Injection Well. Groundwater contaminated by this disposal well is undergoing remediation in accordance with the 1995 ROD implemented for this site. More information on this site is available in the Administrative Record for WAG 1.

- TSF-06 Soil Contamination Area. The portions of this site that were determined to require remediation will be cleaned up in accordance with the decisions implemented in this ROD. More information on this site is available in the Administrative Record for WAG 1.

- TSF-06, Area 8, ANP Cask Storage Pad. Part of this site is currently included within the active Radioactive Parts Service and Storage Area (RPSSA) facility, which will be evaluated during future dismantlement. Sampling during the risk assessment indicated that the soil contamination at this site is below the levels at which remediation is required. More information on this site is available in the Administrative Record for WAG 1.

- TSF-07 Disposal Pond. The Agencies are not aware of any previous removal actions at this site. The portions of this site that were determined to require remediation will be

cleaned up in accordance with the decisions implemented in this ROD. More information on this site is available in the Administrative Record for WAG 1. The original comment (see Comment F7-45) may have intended to specify Site TSF-17, which is described below.

- TSF-10 Drainage Pond. TSF-10 is a drainage pond (rather than a disposal pond as indicated by the comment). Track 2 evaluation of this surface-water discharge pond determined that suspected contaminants are below levels that require remediation. More information on this site is available in the Administrative Record for WAG 1.

- TSF-17 Two Acid Neutralization Pits North of TAN-649. Sampling after a 1993 remediation found no evidence that remaining contamination is present at levels that would require remediation. More information on this site is available in the Administrative Record for WAG 1.

- TSF-20 Two Neutralization Pits North of TAN-607. Sampling after a 1993 remediation found no evidence that remaining contamination is present at levels that would require remediation. More information on this site is available in the Administrative Record for WAG 1.

- TSF-21 IET Valve Pit. Sampling after a 1993 remediation found no evidence that remaining contamination is present at levels that would require remediation. More information on this site is available in the Administrative Record for WAG 1.

- TSF-43 (RPSSA Buildings TAN-647 and TAN-648 and outside pads). This is part of an active facility and will be further assessed during removal. The contamination that is present under the outside pads is fixed in place with an asphalt cover. The contamination that lies beyond the asphalted area was evaluated as TSF-06, Soil Contamination Area South of the Turntable, and the portion of this site that was determined to require remediation will be cleaned up in accordance with the decisions implemented in this ROD. More information on this site is available in the Administrative Record for WAG 1.

- TAN Pool (part of TAN-607 Hot Shop). The TAN Pool is part of an active facility. Potential threats to human health and the environment from this site will be addressed during its removal from use. More information on this site is available in the Administrative Record for WAG 1. As part of an active facility, the TAN Pool is not being addressed under this CERCLA action.

- WRRTF-03 Evaporation Pond. The comprehensive RI/FS documented that discharges to this pond are below levels that pose risk to human health. Threats to ecological receptors from this site will be addressed under the WAG 10 site-wide comprehensive RI/FS. More information on this site is available in the Administrative Record for WAG 1.

- WRRTF-04 Radioactive Liquid Waste Tank. During tank removal in 1993, it was determined that no releases from the tank had occurred. More information on this site is available in the Administrative Record for WAG 1.

- TSF-06, Area 10, Buried Reactor Vessel. The irradiated reactor vessel is contained in a metal storage tank and is believed to be more than 10 feet below ground surface. No

pathway to human or ecological receptors exists. More information on this site is available in the Administrative Record for WAG 1.

3.2.1.3 Classification of Contaminants

23. The presence of mixed low-level waste must be addressed by describing where it is present and developing alternatives that meet regulatory requirements for a permanent disposal of it. [F10-5, N3-5, T3-2]

    Response: Mixed low-level waste (MLLW) contains both hazardous and low-level radioactive components. The contents of the V-Tanks (TSF-09 and TSF-18) and the PM-2A Tanks (TSF-26) are considered mixed low-level waste (MLLW). Regulations applicable to these sites are listed in Part II, Section 7, of this ROD.

24. A comment suggests that much more data should be presented to the public on each Operable Unit and its characterization to allow adequate decision-making. Two tables were included with the comment to illustrate the data that are suggested as necessary. [F10-8]

    Response: In accordance with CERCLA guidance, the Proposed Plan is a brief summary of all the alternatives studied in the detailed analysis phase of the comprehensive RI/FS, highlighting the key factors that led to the identification of the preferred alternative. The Administrative Record for WAG 1 contains all data used by the Agencies to assess risks at these sites and select a response action. Large amounts of data were compiled for each Operable Unit, much of which was contained or referred to in the comprehensive RI/FS. A reasonable attempt was made in the Proposed Plan and the comprehensive RI/FS to reference sources completely. Interested citizens who would like more information about specific aspects of the project are encouraged to contact the Agency representatives or the INEEL at (800) 708-2680.

3.2.2 Risk Assessment

25. The risk assessment is understood to be complicated, but clarification is required on several points. Are there two methods of risk calculation, or just several assumptions within a single method? Also, is risk assessment carried out beyond 100 years? If so, it seems a futile exercise and might lead to inappropriate expenditure of resources. Several commenters asked for more specific information about the risks to human health from lead, polychlorinated biphenyls (PCBs), and mercury. Finally, what standards are used to measure the risk from diesel fuel? [F1-1, F2-4, F7-15, N1-44, N4-7]

    Response: The comprehensive risk assessment process uses one method of risk calculation, with multiple assumptions and calculations, depending on the type of contaminant and media. The future resident exposure scenario evaluated in the comprehensive RI/FS considers a person who moves to the site in 100 years and lives there for 30 years (Section .3.1 of the comprehensive RI/FS provides more details). Risk assessment is a complex task, and the section summarizing this in Proposed Plans continues to be worked on intensively in every successive Proposed Plan, to improve its clarity while keeping it short. Suggestions on which elements of this section are clear, and which still need improvement, are appreciated.

    Mercury and lead are naturally occurring metals that have several pure and compound forms, all of which are toxic to humans. Ingestion and inhalation are the major routes of exposure. The dangers of mercury and lead are greatly increased by their tendencies to persist in the

environment and accumulate in organisms. Mercury and lead can cause short-term illness, permanent impairment, and death in both children and adults. Mercury damages primarily the central nervous system and the kidneys, and can affect the gastrointestinal tract and the lungs. Lead exposure can cause severe damage to the brain and kidneys, as well as gastrointestinal distress. Children are particularly sensitive to the chronic effects of lead, which impairs their growth and development.

Polychlorinated biphenyls (PCBs) are a group of industrial chemicals that were principally used as insulating liquids, valuable for their fire-resistant qualities. However, they were determined to be dangerous to the environment and human health because, when released into the environment, they do not readily break down. PCBs may enter the body through inhalation, ingestion, and direct (skin) contact, where they may damage gastric, reproductive, dermal (skin), and other systems of the body or cause cancer. In the U.S., the manufacture and use of PCBs were phased out beginning in the mid-1970s.

Diesel fuel is a contaminant of concern at the Fuel Leak site (WRRTF-13). The remedial action objective for this site was identified in the revised (November 1998) Proposed Plan as: "Prevent direct exposure to total petroleum hydrocarbon constituents at concentrations over 1,000 mg/kg, in accordance with the State of Idaho Risk-Based Corrective Action guidance." The RAO was changed in this ROD to: "Prevent exposure to petroleum hydrocarbon constituents in accordance with the State of Idaho Risk-Based Corrective Action guidance." The 1,000 mg/kg reference to total petroleum hydrocarbons was removed to conform to the State of Idaho Risk-Based Corrective Action guidance enacted on January 1, 1997. This change is described in Part II, Section 11, of this ROD.

Assessments of risks and hazards from chemicals use national uniform standards determined by scientific testing and agreed upon by agencies such as the EPA. Chemicals and compounds for which toxicity values cannot yet be established (such as PCBs and diesel fuel) use hazard quotients or risk-based guidelines, identified through federal and state regulations. Case study analysis and other research constantly continues to refine and revise the guidelines. The EPA's Internet site (**http://www.epa.gov**) is an excellent source for clear and detailed toxicity information on mercury, lead, and other toxic substances.

26. A comment contends that the public cannot make any decision on the basis of a Proposed Plan that omits data on maximum contamination levels. [F10-2]

Response: Maximum contaminant levels (MCLs) are standards that measure the maximum permissible level of a contaminant in water delivered to any user of a public system. Water is not an affected medium for the release sites that will be remediated under this ROD. For other contaminated media that are present at the TAN sites discussed in this action, such as soils, risk reduction goals use other measurement standards, as appropriate, which are presented in the comprehensive RI/FS, the Proposed Plan, and this ROD in sections on remediation objectives and goals. The results of sampling and analysis of contamination levels at TAN sites are presented fully in the comprehensive RI/FS, Track 1 and 2, and related WAG 1 documents, available in the Administrative Record. The Proposed Plan, based on these documents, is required to summarize the remedial action alternatives considered for each site at which cleanup is needed, and to identify the preferred alternative and its rationale. It is not intended to be a repetition of the data provided in the baseline documents.